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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,704	07/31/2003	Douglas McLaggan	CISCP329/240201	3626
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BEYER WEAVER LLP			EXAMINER	
P.O. BOX 70250			FAROUL, FARAH	
OAKLAND, CA 94612-0250			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/632,704

Applicant(s)

MCLAGGAN ET AL.

Examiner

FARAH FAROUL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on January 17, 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 04/09/2008
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The following Office Action is based on the amendment filed on January 17, 2008, having claims 1-47.

Response to Arguments

2. Applicant's arguments filed January 17, 2008 have been fully considered but they are not persuasive. Applicant has argued that the combination of Wils and Datta fails to teach assigning a plurality of forwarding addresses to each gateway device, measuring traffic for the assigned addresses and adjusting the traffic flow. Applicant has also argued that Wu fails to teach identifying a forwarding address of an identified gateway device with the lowest measured traffic flow. The examiner respectfully disagrees. Wils teaches that Routers (Fig 3, R1 and R2) are each assigned a plurality of forwarding addresses including forwarding addresses (MAC-MA, MAC-MB) and that the forwarding addresses may be reallocated between the routers to adjust the traffic flow (col. 7, lines 27-44). Wu teaches identifying the gateway device having the lowest workload with its matching forwarding address (fig 3, element 58).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Objections

3. Claims 5, 34 and 47 are objected to because of the following informalities:

The phrase "such that" recited in line 3 of claims 5 and 34 should be deleted to render the claims positive.

The phrase "such that" recited in line 2 of claim 47 should be deleted to render the claims positive.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 7-8, 10, 12-13, 15, 17-18, 22, 24, 28, 30-32, 36-37, 39, 41-42 and 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils et al. (US 6,397,260 B1) in view of Datta et al. (US 6,295,276 B1) (both references disclosed by applicant).

For claims 1, 10, 15, 24, 30 and 39, Wils discloses assigning a first plurality of forwarding addresses to a first gateway device (see Fig 3, R1, MAC-MA, MAC-MB) and

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assigning a second plurality of forwarding addresses to a second gateway device (see Fig 3, R1, MAC-MA, MAC-MB)

Changing allocation of the forwarding addresses (column 7, lines 27-43 wherein forwarding addresses may be reassigned between the two routers)

For claims 1, 10, 15, 24, 30 and 39, Wils does not disclose adjusting the traffic flow.

Datta, from the same or similar field of endeavor, teaches adjusting traffic flow (column 15, lines 25-35).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the load-sharing method of Wils and the traffic monitoring method of Datta at the time of the invention. The traffic monitoring method of Datta can be implemented into the network of Wils by monitoring and adjusting traffic in the load-sharing network of Wils. The motivation to combine is that it provides an efficient load-balancing method in a virtual gateway.

For claims 2-3, 12, 17, 31-32 and 41, Datta discloses the method of claims 1, 10, 15, 30 and 39 wherein each forwarding address is a MAC address and wherein each MAC address is a vMAC address (Figure 3, wherein MAC-MB could be the MAC address for router R1 or 2 or the vMAC address for the virtual routers).

For claims 7, 13, 36 and 42, Wils discloses the method of claims 1, 10, 30 and 39 wherein the first gateway device is a first router and the second gateway device is a second router (column 7, lines 30-33 wherein the gateway devices in the redundancy group is router R1 and router R2).

For claims 4, 25 and 33, Wils discloses altering the distribution of forwarding addresses to hosts (column 7, lines 27-43).

For claims 6, 14, 27, 35 and 43, Wils discloses reassigning a forwarding address to a different gateway device (column 7, lines 27-43).

For claims 45-46, Wils discloses the traffic flow is adjusted based upon the measured traffic flow for at least a portion or for each of the assigned forwarding addresses (column 7, lines 27-44 wherein traffic is adjusted based upon traffic associated with a specific MAC address of the plurality of MAC addresses)

For claim 47, Wils discloses re-assigning at least one of the first plurality of forwarding addresses to the second gateway device such that the one of the first plurality of addresses is no longer assigned to the first gateway device (column 7, lines 27-44 wherein forwarding address MAC-MA is reassigned to router R2).

5. Claims 8, 22, 28 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils and Datta as applied to claims 1, 15, 24 and 30 above, and further in view of Shinomiya (US 2003/0037165).

For claims 8, 22, 28 and 37, Wils and Datta disclose the entire claimed invention except for wherein the redundancy group is configured to provide failover services in the event that one of the gateway devices ceases operation

Shinomiya, from the same or similar field of endeavor discloses a method involving a virtual router consisting of a master and a backup router wherein flow rate is

periodically reviewed so that the plurality of routers operate under equivalent load conditions (paragraph 14, line 1 to paragraph 17, line 10).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the load-sharing method of Shinomiya with the modified system of Wils and Datta at the time of the invention. The method of Shinomiya could be implemented into the modified system of Wils and Datta by adjusting the traffic flow of the modified system. The motivation to combine the load-sharing method of Shinomiya with the modified system of Wils and Datta is that it enables efficient load-sharing in the routing processing (Shinomiya, paragraph 15, lines 4-5).

6. Claims 5, 11, 26, 34, 40 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils and Datta as applied to claims 1, 15, 24 and 30 above, and further in view of Wu (7,065,043 B2).

For claims 5, 11, 26, 34 and 40, Wils and Datta disclose the entire claimed invention except for altering the distribution of forwarding address to hosts comprises replying to ARP requests from hosts such that the hosts are instructed to use the forwarding address having the lowest measured traffic flow on one of the gateway devices having the lowest measured traffic flow

Wu, from the same or similar field of endeavor, teaches a load monitor identifying the gateway device with the lowest workload and connecting to the identified gateway device (Figures 3 and 5, column 4, lines 45-57 and column 5, lines 45-55).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the traffic monitoring method of Wu with the modified system of Wils and Datta at the time of the invention. The traffic monitoring method of Wu is implemented into the modified system of Wils and Datta by using the forwarding addresses to connect to the gateway device with the lowest measured workload. The motivation to combine the traffic monitoring method of Wu with the modified system of Wils and Datta is that it provides an efficient load-balancing system.

For claim 44, Wils and Datta disclose the entire claimed invention except for identifying one of the set of gateway devices having the lowest traffic flow and identifying a forwarding address associated with the identified gateway device, wherein the identified forwarding address has the lowest traffic flow of all the forwarding addresses associated with the identified gateway device.

Wu, from the same or similar field of endeavor, teaches identifying the gateway device having the lowest workload with its matching forwarding address (fig 3, element 58).

7. Claims 9, 23, 29 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils and Datta as applied to claims 1, 15, 24 and 30 above, and further in view of Ghanwani et al. (US 6,633,585 B1).

For claims 9, 23, 26 and 38, Wils and Datta disclose the entire claimed invention except for comparing the measured traffic flow to a target traffic flow, the target traffic flow is equal distribution of traffic across the first gateway device and the second

gateway device and further wherein adjusting the traffic flow comprises adjusting the traffic flow across the first gateway device and the second gateway device to more equally distribute the measured traffic flow between the first gateway device and the second gateway device.

Ghanwani, from the same or similar field of endeavor, teaches comparing a measured traffic to a target traffic flow (column 5, lines 44-51), the target traffic flow is equal distribution of traffic across the first gateway device (Fig 2, element 202) and the second gateway device (Fig 2, element 204) (column 2, lines 16-25), and adjusting the traffic flow for equal distribution among the gateway devices (column 6, lines 40-50).

Thus, it would have been obvious to one of ordinary skill in the art to combine the load-sharing method of Ghanwani with the modified system of Wils and Datta at the time of the invention. The load-sharing method of Ghanwani is implemented into the modified system of Wils and Datta by adjusting the traffic flow if the measured traffic flow exceeds the target traffic flow. The motivation to combine the load-sharing method of Ghanwani with the modified system of Wils and Datta is to reduce congestion in the system.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARAH FAROUL whose telephone number is (571)270-1421. The examiner can normally be reached on Monday - Friday 8:00 AM - 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on 571-272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Farah Farou/

Examiner, Art Unit 2616

/FIRMIN BACKER/

Supervisory Patent Examiner, Art Unit 2616